

REMARKS

In the Office Action, claims 38-43, 45-49 and 52-60 were rejected. More specifically,

- Claims 38-39, 42-43 and 45-49 were rejected under 35 U.S.C. § 103(a) as being obvious over the combination of U.S. Patent 6,165,834 (Agarwal) and U.S. Patent 5,866,453 (Prall);
- Claims 40-43, 45 and 48 were rejected under 35 U.S.C. § 103(a) as being obvious over either the combination of Agarwal, Prall and U.S. Patent 6,222,722 (Fukuzumi); and
- Claims 38-43, 45-49 and 52-60 were rejected under 35 U.S.C. § 103(a) as being obvious over the combination of Fukuzumi, Agarwal, and U.S. Patent 6,077,742 (Chen).

By this amendment, claims 38, 52 and 58 have been amended. Thus, claims 38-43, 45-49 and 52-60 are pending. For the reasons set forth hereinbelow, Applicants request that the rejections associated with the pending claims be withdrawn.

§ 103 Rejections

Claims 38-39, 42-43 and 45-49

Applicants have herein amended independent claim 38. Applicants submit that amended claim 38 is nonobvious over the combination of Agarwal and Prall because the references fail to teach or suggest each and every feature of claim 38. *See* MPEP § 2143 (stating that one of the elements of a *prima facie* case of obviousness under § 103(a) is that the prior art references, either alone or in

combination, must teach or suggest every limitation of the claimed invention). More particularly, Applicants submit that the cited references fail to teach or suggest, among other things, a method of forming a capacitor “wherein the first and second electrodes each include a non-smooth surface” as recited in claim 38.

Applicants note that both Agarwal and Prall are **silent** as to forming first and second electrodes having any non-smooth surfaces. Accordingly, Applicants respectfully request that the § 103(a) rejection associated with the combination of Agarwal and Prall be withdrawn for claim 38.

Applicants further submit that claims 39, 42-43 and 45-49, which depend from claim 38, are also nonobvious over the combination of Agarwal and Prall. *See MPEP § 2143.03* (stating that if an independent claim is nonobvious under § 103(a), then any claim depending therefrom is nonobvious). Accordingly, Applicants respectfully request that the § 103(a) rejections associated with the combination of Agarwal and Prall be withdrawn for claims 38-39, 42-43 and 45-49.

Claims 40-43, 45 and 48

Claims 40-43, 45 and 48 depend from independent claim 38. For the following reasons, Applicants submit that amended claim 38 is nonobvious over the combination of Agarwal, Prall and Fukuzumi.

First, the references fail to teach or suggest each and every feature of claim 38. *See MPEP § 2143 id.* As explained hereinabove, the combination of Agarwal and Prall fails to teach or suggest a method of forming a capacitor “wherein the first and second electrodes each include a non-smooth surface” as recited in claim 38. Fukuzumi is cited as teaching certain materials recited in claims 40-43, 45 and 48. Even if taken as true, Applicants submit that Fukuzumi still fails to remedy the defects of

Agarwal and Prall with respect to claim 38.

Second, Applicants respectfully submit that the Examiner has not established a *prima facie* case of obviousness. *See* MPEP § 2143 (stating that, to establish a *prima facie* case of obviousness, there **must** be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings).

Applicants submit that Agarwal, Prall and Fukuzumi fail to teach or suggest the desirability of the invention recited in claim 38 and submit that the Examiner has not pointed to any specific teaching in the cited references that provides the suggestion or motivation for modifying the capacitor of Agarwal to realize the invention recited in claim 38. Applicants note that whereas Agarwal teaches, among other things, increasing the storage capacitance of a capacitor by forming the capacitor with a **high K dielectric**, Prall teaches, among other things, an **etch process** for aligning a capacitor structure and Fukuzumi teaches forming electrodes having an **increased surface area**.

Applicants also submit that the level of knowledge of one of ordinary skill in the art at the time of the invention cannot be relied upon to provide the suggestion to modify the reference. *See* Al-Site Corp. v. VSI Int'l Inc., 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999) and MPEP § 2143.01.

Applicants further submit that even if Agarwal can be modified to realize the invention recited in claim 38, the resultant modification still does not render the invention recited in claim 38 obvious unless the cited references also specifically suggest the desirability of the modification. *See* In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) and MPEP § 2143.01. As stated previously, Applicants submit that the cited references fail to teach or suggest such desirability.

Third, Applicants respectfully submit that the § 103(a) rejection of claim 38 is not based solely

on the level of knowledge of one of ordinary skill in the art at the time of the invention. As stated previously, Applicants submit that the teachings of Agarwal, Prall and Fukuzumi fail to provide the suggestion or motivation to modify Agarwal to realize the invention recited in claim 38. Thus, Applicants submit that the § 103(a) rejection of claim 38 is a hindsight reconstruction, using the teachings of Applicants' disclosure to provide the suggestion or motivation to modify Agarwal to realize the invention recited in claim 38. Such hindsight reconstruction is improper and impermissible under the law.

Therefore, for the reasons set forth hereinabove, Applicants submit that claim 38 is nonobvious over the combination of Agarwal, Prall and Fukuzumi. Applicants further submit that claims 40-43, 45 and 48, which depend from claim 38, are nonobvious over the combination of Agarwal, Prall and Fukuzumi. *See MPEP § 2143.03 id.* Accordingly, Applicants respectfully request that the § 103(a) rejections associated with the combination of Agarwal, Prall and Fukuzumi be withdrawn for claims 40-43, 45 and 48.

Claims 38-43 and 45-49

Applicants submit that amended claim 38 is non-obvious over the combination of Fukuzumi, Agrawal and Chen because, among other things, there is no suggestion or motivation from the prior art as a whole for a person of ordinary skill to have combined or modified these references to realize the invention of claim 38. *See MPEP § 2143 id.* Chen is cited as teaching forming a first electrode 36' in a recess of a substrate assembly and extending above the uppermost surface of the substrate assembly including an insulating layer 32/28 (Fig 5); forming a capacitor dielectric 40 on the first electrode 36' and the uppermost surface of the substrate assembly including the insulating layer

32/28; and forming the second electrode 42 on the dielectric 40 and the uppermost surface of the substrate assembly including the insulating layer 32/28.

Applicants agree with the Examiner's determination that Fukuzumi fails to disclose, teach or suggest forming the second electrode on the uppermost surface of the substrate assembly as recited in claim 38. However, Applicants respectfully disagree with the Examiner's determination that it would have been obvious to combine Fukuzumi with Agarwal and Chen to construct a capacitor by the method recited in claim 38 because of "the desirability to form a trench capacitor having a planar electrode structure" and because of "the desirability to form the top second electrode to entirely cover the capacitor dielectric layer."

Applicants note that MPEP § 2143.01 specifically states that the prior art **must suggest the desirability** of the claimed invention. Applicants submit that the cited references fail to teach or suggest such desirability and respectfully submit that the Examiner has not pointed to any specific teaching in the cited references that provides the suggestion or motivation for modifying the capacitor of Fukuzumi to realize the invention recited in claim 38.

Applicants also note that MPEP § 2143.01 further states that the level of skill in the art **can not be relied upon** to provide the suggestion to combine references. Applicants submit that a § 103(a) rejection of claim 38 based on the combination of Fukuzumi, Agarwal and Chen would be a hindsight reconstruction, using Applicants' claim as a template to construct a capacitor by the method recited in claim 38 by picking and choosing isolated disclosures from the prior art. Such hindsight reconstruction is improper and impermissible under the law. The mere fact that references can be combined does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *See* MPEP § 2143.01.

Applicants further submit that claims 39-43 and 45-49, which depend from claim 38, are also nonobvious over the combination of Fukuzumi, Agarwal and Chen. *See MPEP § 2143.03 id.* Accordingly, Applicants respectfully request that the § 103(a) rejections associated with the combination of Fukuzumi, Agarwal and Chen be withdrawn for claims 38-43 and 45-49.

Claims 52-57

Applicants have herein amended independent claim 52. For reasons similar to those set forth hereinabove with respect to claim 38, Applicants respectfully submit that amended claim 52 is nonobvious over the combination of Fukuzumi, Agarwal and Chen because, among other things, there is no suggestion or motivation from the prior art as a whole for a person of ordinary skill to have combined or modified these references to realize the invention of claim 52. *See MPEP § 2143 id.*

Applicants also submit that claims 53-57, which depend from claim 52, are also nonobvious over the combination of Fukuzumi, Agarwal and Chen. *See MPEP § 2143.03 id.* Accordingly, Applicants respectfully request that the § 103(a) rejections associated with the combination of Fukuzumi, Agarwal and Chen be withdrawn for claims 52-57.

Claims 58-60

Applicants have herein amended independent claim 58. For reasons similar to those set forth hereinabove with respect to claim 38, Applicants respectfully submit that amended claim 58 is nonobvious over the combination of Fukuzumi, Agarwal and Chen because, among other things, there is no suggestion or motivation from the prior art as a whole for a person of ordinary skill to have combined or modified these references to realize the invention of claim 58. *See MPEP § 2143 id.*

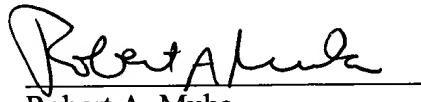
Applicants also submit that claims 59-60, which depend from claim 58, are also nonobvious over the combination of Fukuzumi, Agarwal and Chen. *See* MPEP § 2143.03 *id.* Accordingly, Applicants respectfully request that the § 103(a) rejections associated with the combination of Fukuzumi, Agarwal and Chen be withdrawn for claims 58-60.

CONCLUSION

Applicants respectfully request a Notice Of Allowance for the pending claims in the present application. If the Examiner is of the opinion that the present application is in condition for disposition other than allowance, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below in order that the Examiner's concerns may be expeditiously addressed.

Respectfully submitted,

Date: September 17, 2004


Robert A. Muha
Robert A. Muha
Reg. No. 44,249

KIRKPATRICK & LOCKHART, LLP
Henry W. Oliver Building
535 Smithfield Street
Pittsburgh, Pennsylvania 15222

Telephone: (412) 355-8244
Facsimile: (412) 355-6501
E-mail: rmuha@kl.com